

Foamballs

To artificial snowballs and mudballs will you permit me to add an experience of foamballs. We were staying at Biarritz in early spring, and one morning on going down to the beach we found it covered with such balls. A strong wind was blowing off the bay, which caught the wave-crests, and threw off little masses of foam. These, though quite small at first, accumulated, and, in some cases, conglomerated as they rolled inland, until they gradually attained a size of two to three feet in diameter; and as many of these balls of various sizes were drifted along by the wind, they presented a most singular appearance. This was made more curious by some of the town dogs catching sight of the objects, and taking to cheyving them along the sand, until a sort of steeplechase was established. Every now and then a dog would overtake and dash into a flying sphere, only to find it, to his manifest disappointment, of a very unsubstantial character. The beach was covered far and wide with the debris of the broken balls.

Guildown, March 31

J. RAND CAPRON

Meteor; the Transit; the Comet

As you have on previous occasions deemed it of sufficient interest to record notices of striking meteors observed, I send you an account of a singularly brilliant and unusual form which appeared here about half-past 8 p.m. on the 29th inst.

I happened to be looking at a portion of the sky a little below the constellation "Orion," that is to the southward and eastward, when suddenly a brilliant meteor became apparent. Unlike ordinary meteors, it did not move, at least to my vision; it simply increased in size and brilliancy, till it appeared like a fine "Roman candle" or "blue light," intensely blue, and emitting rays at about two hundred yards' distance. It appeared to illuminate the country with a pale blue light.

It disappeared as suddenly as it came. Could its stationary appearance and increasing brightness have been caused by its approaching me in a direct line? I have thought so.

I saw the transit of Venus splendidly from my hilltop, through my binocular, an ordinary hand-telescope, and even with the naked eye, protected of course in each instance by coloured glass.

The comet also was a glorious object for several weeks. It was first seen here on September 23. I noticed very plainly the dark line near the right edge of the tail, as if there had been a fold in a luminous substance; that was the idea that the appearance gave me. Fig. 3, p. 610, vol. xxvi. of NATURE, most resembles what we saw here, but the shadow, or dark part, from the V-like incision at the end, should be longer and darker.

Not being a scientific observer, I did not trouble you with any notices of either, feeling sure you would have plenty.

British Consulate, Noumea, January 31 E. L. LAYARD

Ticks

CAN none of your readers be prevailed on to take up the study of the Ixodes (Ticks), of which there are several British species? I feel sure their life-history, if fully worked out, would prove both interesting and instructive, and might throw some light on a mysterious and deadly disease amongst cattle and sheep, which prevails extensively in Scotland, and in some districts in England. It is a curious fact that Ixodes are almost invariably, if not always found infesting sheep where this disease prevails, and it becomes an important question whether their presence is merely a coincidence, from the rough coarse natural grasses forming a congenial habitat, or whether they are not the carriers or inoculators of vegetable or other poison. I should be very glad to give further information to any one disposed to take up the study.

W. E. L.

Ignition by Sunlight

"M." MAY like to have the following case:—I went once at sunrise (at Kishnagar, Bengal) into my coachhouse, which opened east. I saw smoke ascending from the tops of the two carriage lamps. I jumped hastily to the conclusion that my syce (groom) had been using the carriage candles illegitimately, and taxed him. His defence obliged me to examine closer, and to see that the two wicks had been ignited to smouldering point by the horizontal rays of the sun condensed by the parabolic reflectors

at the backs of the lamps. A notable enough example of Indian heat, was it not?

W. J. HIRSCH

Collingwood, March 31

WHEN driving along the Beaumaris Road on Tuesday last at half-past three, I observed smoke issuing from the top of one of the carriage lamps. I stopped to examine the cause, and found that the reflector had concentrated the sun's rays on the wick of the candle lamp and caused it to smoulder.

Rhianva, Bangor, April 2

EDMUND H. VERNEY

Mimicry

REFERRING to Mr. Stokoe's letter in NATURE, vol. xxvii., p. 508, and to his remarks on the defective vision of the Teleostei as proved by the very poor imitations of insects which are sufficient to entrap them, have not bats and swallows—animals of certainly more than normal acuteness of vision—been hooked on several occasions by the flyfisher?

H. J. MORGAN

Exeter, March 31

Braces or Waistband?

CAN you or any of your readers answer the following:—Which method of suspending the trousers is the least interference with nature—their suspension from the hips or from the shoulders, the wearing of braces, or a tight waistband?

R. M.

March 16

SINGING, SPEAKING, AND STAMMERING¹

II.—SPEAKING

IN the first lecture the musical and emotional side of human utterance; in the second, the colloquial and intellectual aspect of speech was adverted to. Speaking in modern times, and in England especially, is a more neglected art than singing. Even in Shakespeare's days there must have been a state of things not very dissimilar; for he makes Dogberry, who always manages to state the wrong proposition, say, "Readin' and writin' come by nature," and there is a quaintly satirical passage in that graceful and ethereal play, the "Midsummer Night's Dream," which goes straight to the point. Theseus, in commenting on the Clown's blunders of diction, says:—

"Where I have come, great clerks have purposed
To greet me with premeditated welcomes;
Where I have seen them shiver and look pale,
Make periods in the mid-t of sentences,
Throttle their practised accents in their fears,
And in conclusion dumbly have broke off,
Not paying me a welcome."

It cannot be too often reiterated that speech is essentially an acquirement, and that it must be learned. At first, indeed, it is picked up by imitation in early childhood, and later on in life is commonly neglected and left to take its chance; though much can be done with little labour to correct defects both of this and of the handwriting, the two first things by which a man's intellectual status is judged of. It is unlike singing, in that pleasant and articulate speaking does not require the gift of a musical organ, but is open to all alike. There exists, however, in some quarters a prejudice against fluent speaking. Ineffableness is held to indicate grasp of thought; taciturnity to be the cloak of profundity. This would be correct if fluency were to supersede accuracy; but such an antagonism is by no means necessary, or it would reach its natural limit in the case of the sailor's parrot, which "could not talk, but thought the more."

Some other hindrances to correct speech require passing comment. In the first place its acquirement is too much mixed up with recitation and dramatic representation. Neither exaggeration nor servile imitation produce good speaking, the one salient feature of which is natural—

¹ Abstract by the Author of three Lectures at the Royal Institution, by W. H. Stone, M.B., F.R.C.P. Continued from p. 516.

ness and spontaneity. Elocutionary teaching has also been hindered by an over-cultivation of poetical rhythm, which tends to reduce speech to a kind of singsong. The same may be said of punctuation, which is not elocutionary but grammatical; though the absurd rule has been formulated to "pause one for the comma, two for the semicolon, three for the colon, and four for the full stop." It is sufficient to test this pedantic error by reading any piece of nervous or pathetic English on the system, and thus to show its full absurdity.

It has been said above that whereas in singing the musical note is predominant, in speaking it is secondary and subsidiary to the words; but it still exists, and its function is well described by Cicero in his treatise, "De Oratore." He says, "Est in dicendo etiam quidam cantus obscurior." An appreciation of this fact is of the greatest value to the public speaker, since the imperfect regulation of the laryngeal element often renders the voice indistinct and even inaudible. Many speakers drop their voices with a descending inflection, and from want of musical ear fail to raise it again: others err from excess of noise, and in their anxiety to be audible, shout and labour, with the result of enveloping the significant sound in an overwhelming mass of heterogeneous and meaningless vibration.

It has several times been attempted to reduce speech to a definite musical notation like that of singing. To a certain extent this was done in the Ecclesiastical Plain-song; but it was carried to its extreme limit in a work of the last century, the "Prosodia Rationalis" of Joshua Steele. It is sufficient to glance at the vague and complicated symbols there employed to realise its practical uselessness.¹ Indeed, so far from being an advance, it is really a step of retrograde character. Mr. Deacon, in "Grove's Dictionary of Music," gives very clearly the four chief differences between song and speech:—1. The isochronism of vibration is never present long enough to make a musical note. 2. Little more than the lower third of the singing voice comes into play in speech. 3. In singing short syllables do not exist. 4. Singing tends to preserve intact purity of language; speaking, to split it up into dialects and idiosyncracies.

A common defect in speaking in large buildings is inability to catch the keynote or resonance vibration of the inclosed space. All large areas have such resonance notes, and in some it is very marked: Westminster Abbey, for instance, consonates to G sharp, and intoning on this note is much more audible than on one a semitone above or below it. Personally the lecturer prefers the use of an open chest-voice as little vocalised as may be. It is less laborious, less liable to accidents, less liable to develop the affection commonly known as "clergyman's throat," and, by removing the sensation of effort, more easy and sympathetic.

He then proceeded to analyse the constituents of a good delivery; and first, pauses. Haste is one of the commonest faults in speech. It has two defects; the one in overtaxing the complex muscular mechanism of the speaker; the other in adding to the intellectual labour of the listener. The former would be considered in the third lecture; the latter needed a few words. The rapidity of reception of ideas through the ear differs materially in different persons, even excluding those distinctly "hard of hearing." It is not great among the uneducated, whence it had been paradoxically said that all illiterate persons are deaf. But they do require a longer time to arouse them to a state of attention than the more cultivated. Naval officers had defended the practice of swearing, or as it was euphemistically termed, "shotting their speech," with sailors; the expletive rousing attention and preparing the mind for the succeeding command. Mr. Hullah had on a similar ground explained the refrains or fal-lal-las of the older music, in

that the dilute the too concentrated sense of the words, and give time for the perception of the music.

When the great actor Salvini was in this country in 1875, the lecturer made some experiments on this point. Salvini's voice was one of the most remarkable ever heard for its power of travelling; even suppressed phrases coming up to the distant gallery with perfect clearness. He spoke on a note about D in the bass, from the chest, and in a sort of recitative; there were distinct periods from accent to accent, and the inflections were very large, running over an interval of more than a fifth. The individual words came about one a second, and the pauses were astonishingly long. They frequently amounted to four, several times to five, and at the two great crises of the play to seven continuous seconds. And yet there was no sense of delay or of interruption, but quite the reverse. The lecturer incidentally noted another thing, which the recent development of Wagner's musical theories had invested with additional interest. In the play "Il Gladiatore," the four principal characters, a young Christian virgin, a Roman matron, the hero a Roman officer, and the gladiator, formed an unintentional though perfect vocal quartett of soprano, contralto, tenor, and bass. At times the alternations of dialogue produced a distinctly musical effect, an observation which to his mind strongly corroborated the views of the great musician lately deceased, that dramatic music, instead of being conventional, should be the outflow of passion and emotion, and that this result could be attained as well from the elocutionary as from the strictly melodic side.

Pronunciation, under which is included respiration as well as vocalisation, was then spoken of, schemes of the vowels and consonants by Dr. Bristowe and Melville Bell being distributed among the audience. The latter being unfamiliar in this country, may be reproduced in this abstract.

GENERAL VOWEL SCHEME.

MELVILLE BELL.

Lingual.	Labio-Lingual.	Labial.
1. Eel	Ü (German)	Ooze
2. In	U (French)	O (Provincial)
3. Ale	Û (French)	Old
4. Ill (Scotch)	Zur (Provincial)	Ore
5. Ell	Eu (French)	Awe
6. An	Er Ir (English)	Urge (Scotch)
7. Ask	Er Ir (variety)	Urge
8. "	Ah	"

ARTICULATIONS OF CONSONANTS.

				Oral.	Nasal.				
{ Continuous }	{ Obstructive. Complete contact. }	{	P	B	M			
				T	D	N			
				K	G	Ng			
	{	{ Approximation }	{ Firm ... }	{	Ph	Bh			
					Rh	R (smooth)			
					Ch	Gh			
					Wh	W			
					S	Zh			
					Sh	Z			
					Yh	Y			
					{ Relaxed }	{	KRh	Gr (burr)	
							Rh	R (rough)	
{ Partial contact }					{	F	V	
							Th	Th	
							Li (Welsh)	L	
	L (Gaelic)								

The aspirate was briefly described as being no fixed

¹ "King's College Lectures on Elocution," Plumtre p. 112.

articulation, but simply a vowel sound first whispered and then pronounced aloud. Accent has for its object to make one syllable or several more prominent than those around. The English language tends to throw it as far back in a word as is practicable. A long word may have one strong, and one or even two weaker accents in it.

Inflexion is either rising, falling, or a compound of these. As a rule, rising tones appeal, falling tones assert, compound tones suggest; a complete balance of the two is the antithesis, which can be heard in such a remark as "It was not so much what you said—as your manner of saying it, which struck me." The contrasted effect of the two accents may be reproduced by reading this sentence aloud and intelligently.

When inflexion is applied in this way to sentences, three cases occur: the sentence either asserts, asks, or orders, and the nature of the inflexion depends on the relative circumstances of the speaker and listener.

Delivery and modulation are combinations of pausing and of pitch. The conversational pitch being taken as a medium, all below this denotes sadness or solemnity; all above it joy or levity. Force, expression, and sentiment, thus developed, are infinite in their variety.

Emphasis can only be attained and regulated by a full perception of the point to be brought out; as a rule it marks the predicate of a logical expression. False emphasis is the foundation of many quaint stories in common currency. Speaking generally, new, contrasted, or antithetical ideas are marked by emphasis.

In conclusion, the lecturer gave three general rules by which any one can speak. The first, in the words of Horace: "Dicendi rectè principium est sapere, et fons;" that is, "Know exactly what you are going to say." The second, "Enleavour to forget yourself." This frame of mind had been formulated by old elocutionists as "Have a contempt for your audience." He preferred to state it in a less obnoxious way as "Consider yourself one of your audience." The third, "Be natural and unaffected."

By bearing in mind these simple injunctions any man free of congenital or acquired defects, though he might not be a brilliant, could hardly fail in being an agreeable and sympathetic speaker.

PROFESSOR SCHIAPARELLI ON THE GREAT COMET OF 1882

READERS of NATURE will be glad to have a full report of the interesting popular lecture which Prof. Schiaparelli, the well-known Italian astronomer, gave in Milan on February 4, on the great comet of 1882. Referring to the national misfortune which had given origin to his and other lectures, he began by showing that while a connection between the comet and the inundations which wasted, in October 1882, many Venetian provinces, was not absolutely impossible, it was at least very improbable, both because the comet was yet a great distance from the earth when the floods rose, and from the difficulty of understanding why the supposed influence of the comet should have acted only on that little part of the globe. After this preamble M. Schiaparelli gave the public a rapid and elementary account of our planetary system, and of the comet's trajectory during its passage near the sun and planets. The orbit of the comet, in the position which could be subjected to astronomical measurement, is parabolic, in a plane inclined 30° or 40° to planes of the solar system. The greater portion of the orbit is in the southern regions; for in the austral hemisphere the comet was sooner and better observed than in the boreal, where it never was very high above the horizon. The vertex of the parabola is very near the sun, and only when the comet was approaching to this position with an extraordinary rapidity, astronomers could perceive it,—at

Auckland (September 2), at the Cape of Good Hope, in Australia, the Argentine Republic, and Brazil. The direction of its movement was perhaps towards the sun; but the inconceivable rate which the comet acquired in its falling towards the sun (430 km. in a second, sixteen times the mean velocity of the earth in its orbit), and the lateral rush coming from it, were enough at that time to overcome the attractive power of the sun, and to hinder the great luminary from swallowing it. The attraction of the sun failed not to produce its effect, slackening successively its flight; but being animated by this great velocity, the comet could escape in security to where the sun's action is very feeble, and whence it will not return for many years.

The Cape astronomer had the opportunity of witnessing this rare spectacle of a heavenly body which, rushing headlong from extraplanetary depths, went directly on the sun, as if it would fall in, and notwithstanding, in a few hours delivered itself, changing completely its direction of motion. At that time the earth was placed very obliquely in respect to the arc described by the comet about the sun, so that astronomers observed it with a great foreshortening of perspective. In those hours the comet, being exposed to an extraordinary heat, swelled and became so luminous, that the Cape astronomers, and afterwards some in Europe, could see it near the sun. They could make the absolutely new observation of a comet's transit before the solar disk, thus satisfying an ancient desire of astronomers, who have wished to know if in those bodies' head, which often appears as a very bright star, is hidden an obscure perceptible nucleus, and to judge of the density of the shining atmosphere whose splendour produces the star's appearance. In this case it was not possible to be deceived by an illusion, as happened in 1819. Messrs. Finlay and Elkin, at the Cape, saw the comet gradually approach the sun's limb, touch it, and disappear; so that their searches to find the comet in the place where it obviously was were vain. The comet then was so thin and clear, that the most slender cloud would more obscure the sun: its solid nucleus (if it had a nucleus, as was very likely) was so small that the observer's telescope could not perceive any spot or shade. After it left the neighbourhood of the sun, the effects of the enormous heat began to appear in the development of that splendid tail, which everybody could see in the morning hours of October and November.

The orbit of the comet (continued the Professor) is not easily deducible from the very little portion which we know. Both because to assign a trajectory observed in a small branch is very difficult, and sometimes impossible, and because exact and definitive calculations will not be undertaken before the vanishing of the comet; the notes which at present can be given are only approximative. On observations of last September, October, and November, it was stated that the period of the comet is included between eight and nine centuries, and the aphelion is nearly six times farther than Neptune from the sun (175 times the earth's mean vector radius), the rate of velocity in aphelion and perihelion being as 1 to 23,000.

On the brightness of the comet, M. Schiaparelli observed that it could be attributed to three causes: the strong illumination of the sun, its own light, and electrical discharges, which take place continually in similar bodies, in the opinion of expert physicists. Those causes united to make that very splendid appearance of a matter clearer and less dense than the rarefied air of our best pneumatic engines. The density of the tail was so small that an astronomer estimated it at no more than a few kilogrammes, while its dimensions were larger than were ever before observed in comets. It is true that other comets (that of 1861, for example) showed an apparently longer tail, their position in respect to the earth being more favourable to observation; but in the annals of